

SEQUENCE LISTING

<110> Japan Science And Technology Corporation

<120> Identification of Novel Substrate I-TRAF of IKK-i Kinase

<130> JA901491

<160> 4

<210> 1

<211> 2154

<212> DNA

<213> Human

<400> 1

```

agatgcagag cacagccaat tacctgtggc acacagatga cctgctgggg cagggggcca      60
ctgccagtgt gtacaaggcc cgcaacaaga aatccggaga gctgggtgct gtgaaggtct      120
tcaacactac cagctacctg cggccccgcg aggtgcaggt gagggagttt gaggtcctgc      180
ggaagctgaa ccaccagaac atcgtcaagc tctttgcggt ggaggagacg ggcggaagcc      240
ggcagaaggt actggtgatg gagtactgct ccagtgggag cctgctgagt gtgctggaga      300
gccctgagaa tgcctttggg ctgcctgagg atgagttcct ggtggtgctg cgctgtgtgg      360
tgcccgccat gaaccacctg cgggagaacg gcattgtgca tcgcgacatc aagccgggga      420
acatcatgcg cctcgtaggg gaggaggggc agagcatcta caagctgaca gacttcggcg      480
ctgcccggga gctggatgat gatgagaagt tcgtctcggt ctatgggact gaggagtacc      540
tgcacccga catgtatgag cgggcggtgc ttcgaaagcc ccagcaaaaa gcgttcgggg      600
tgactgtgga tctctggagc attggagtga cttgtacca tgcagccact ggcagcctgc      660
cttcatccc ctttgggtggg ccacggcgga acaaggagat catgtaccg atcaccacag      720
agaagccggc tggggccatt gcaggtgcc agaggcgga gaacgggccc ctggagtgga      780
gctacaccct ccccatcacc tgccagctgt cactggggct gcagagccag ctggtgccc      840
tcctggccaa catcctggag gtggagcagg ccaagtgctg gggttcgac cagttctttg      900
cggagaccag tgacatcctg cagcgagttg tcgtccatgt cttctccctg tcccaggcag      960
tcctgcacca catctatata catgcccaca acacgatagc cttttccag gaggccgtgc     1020
acaagcagac cagtgtggcc ccccgacacc aggagtacct ctttgagggt cacctctgtg     1080
tcctcgagcc cagcgtctca gcacagcaca tcgcccacac gacggcaagc agccccctga     1140
ccctcttcag cacagccatc cctaaggggc tggccttcag ggaccctgct ctggacgtcc     1200
ccaagttcgt ccccaaagtg gacctgcagg cggattacaa cactgccaag ggcgtgttgg     1260

```

gcgccggcta ccaggccctg cggctggcac gggccctgct ggatgggcag gagctaattgt	1320
ttcgggggct gcaactgggtc atggaggtgc tccaggccac atgcagacgg actctggaag	1380
tggcaaggac atccctcctc tacctcagca gcagcctggg aactgagagg ttcagcagcg	1440
tggctggaac gcctgagatc caggaactga aggcggctgc agaactgagg tccaggctgc	1500
ggactctagc ggaggtcctc tccagatgct cccaaaatat cacggagacc caggagagcc	1560
tgagcagcct gaaccgggag ctggtgaaga gccgggatca ggtacatgag gacagaagca	1620
tccagcagat tcagtgtgt ttggacaaga tgaacttcat ctacaaacag ttcaagaagt	1680
ctaggatgag gccagggtt ggctacaacg aggagcagat tcacaagctg gataagggtga	1740
atttcagtca tttagccaaa agactcctgc aggtgttcca ggaggagtgc gtgcagaagt	1800
atcaagcgtc cttagtca caccgcaaga ggatgagggt ggtgcacgag accaggaacc	1860
acctgcgcct ggttggtgt tctgtggctg cctgtaacac agaagcccag ggggtccagg	1920
agagtctcag caagctcctg gaagagctat ctcaccagct ccttcaggac cgagcaaagg	1980
gggctcaggc ctgcgcct cccatagctc cttaccccag ccctacacga aaggacctgc	2040
ttctccacat gcaagagctc tgcgagggga tgaagctgct ggcattctgac ctctggaca	2100
acaaccgcat catcgaacgg ctaaataagag tcccagcacc tctgatgtc tgag	2154

<210> 2

<211> 716

<212> PRT

<213> Human

<400> 2

Met Gln Ser Thr Ala Asn Tyr Leu Trp His Thr Asp Asp Leu Leu	15
Gly Gln Gly Ala Thr Ala Ser Val Tyr Lys Ala Arg Asn Lys Lys	30
Ser Gly Glu Leu Val Ala Val Lys Val Phe Asn Thr Thr Ser Tyr	45
Leu Arg Pro Arg Glu Val Gln Val Arg Glu Phe Glu Val Leu Arg	60
Lys Leu Asn His Gln Asn Ile Val Lys Leu Phe Ala Val Glu Glu	75
Thr Gly Gly Ser Arg Gln Lys Val Leu Val Met Glu Tyr Cys Ser	90
Ser Gly Ser Leu Leu Ser Val Leu Glu Ser Pro Glu Asn Ala Phe	105
Gly Leu Pro Glu Asp Glu Phe Leu Val Val Leu Arg Cys Val Val	120
Ala Gly Met Asn His Leu Arg Glu Asn Gly Ile Val His Arg Asp	135
Ile Lys Pro Gly Asn Ile Met Arg Leu Val Gly Glu Glu Gly Gln	150
Ser Ile Tyr Lys Leu Thr Asp Phe Gly Ala Ala Arg Glu Leu Asp	165
Asp Asp Glu Lys Phe Val Ser Val Tyr Gly Thr Glu Glu Tyr Leu	180
His Pro Asp Met Tyr Glu Arg Ala Val Leu Arg Lys Pro Gln Gln	195
Lys Ala Phe Gly Val Thr Val Asp Leu Trp Ser Ile Gly Val Thr	210
Leu Tyr His Ala Ala Thr Gly Ser Leu Pro Phe Ile Pro Phe Gly	225

Gly Pro Arg Arg Asn Lys Glu Ile Met Tyr Arg Ile Thr Thr Glu	240
Lys Pro Ala Gly Ala Ile Ala Gly Ala Gln Arg Arg Glu Asn Gly	255
Pro Leu Glu Trp Ser Tyr Thr Leu Pro Ile Thr Cys Gln Leu Ser	270
Leu Gly Leu Gln Ser Gln Leu Val Pro Ile Leu Ala Asn Ile Leu	285
Glu Val Glu Gln Ala Lys Cys Trp Gly Phe Asp Gln Phe Phe Ala	300
Glu Thr Ser Asp Ile Leu Gln Arg Val Val Val His Val Phe Ser	315
Leu Ser Gln Ala Val Leu His His Ile Tyr Ile His Ala His Asn	330
Thr Ile Ala Ile Phe Gln Glu Ala Val His Lys Gln Thr Ser Val	345
Ala Pro Arg His Gln Glu Tyr Leu Phe Glu Gly His Leu Cys Val	360
Leu Glu Pro Ser Val Ser Ala Gln His Ile Ala His Thr Thr Ala	375
Ser Ser Pro Leu Thr Leu Phe Ser Thr Ala Ile Pro Lys Gly Leu	390
Ala Phe Arg Asp Pro Ala Leu Asp Val Pro Lys Phe Val Pro Lys	405
Val Asp Leu Gln Ala Asp Tyr Asn Thr Ala Lys Gly Val Leu Gly	420
Ala Gly Tyr Gln Ala Leu Arg Leu Ala Arg Ala Leu Leu Asp Gly	435
Gln Glu Leu Met Phe Arg Gly Leu His Trp Val Met Glu Val Leu	450
Gln Ala Thr Cys Arg Arg Thr Leu Glu Val Ala Arg Thr Ser Leu	465
Leu Tyr Leu Ser Ser Ser Leu Gly Thr Glu Arg Phe Ser Ser Val	480
Ala Gly Thr Pro Glu Ile Gln Glu Leu Lys Ala Ala Ala Glu Leu	495
Arg Ser Arg Leu Arg Thr Leu Ala Glu Val Leu Ser Arg Cys Ser	510
Gln Asn Ile Thr Glu Thr Gln Glu Ser Leu Ser Ser Leu Asn Arg	525
Glu Leu Val Lys Ser Arg Asp Gln Val His Glu Asp Arg Ser Ile	540
Gln Gln Ile Gln Cys Cys Leu Asp Lys Met Asn Phe Ile Tyr Lys	555
Gln Phe Lys Lys Ser Arg Met Arg Pro Gly Leu Gly Tyr Asn Glu	570
Glu Gln Ile His Lys Leu Asp Lys Val Asn Phe Ser His Leu Ala	585
Lys Arg Leu Leu Gln Val Phe Gln Glu Glu Cys Val Gln Lys Tyr	600
Gln Ala Ser Leu Val Thr His Gly Lys Arg Met Arg Val Val His	615
Glu Thr Arg Asn His Leu Arg Leu Val Gly Cys Ser Val Ala Ala	630
Cys Asn Thr Glu Ala Gln Gly Val Gln Glu Ser Leu Ser Lys Leu	645
Leu Glu Glu Leu Ser His Gln Leu Leu Gln Asp Arg Ala Lys Gly	660
Ala Gln Ala Ser Pro Pro Pro Ile Ala Pro Tyr Pro Ser Pro Thr	675
Arg Lys Asp Leu Leu Leu His Met Gln Glu Leu Cys Glu Gly Met	690
Lys Leu Leu Ala Ser Asp Leu Leu Asp Asn Asn Arg Ile Ile Glu	705
Arg Leu Asn Arg Val Pro Ala Pro Pro Asp Val ***	716

<210> 3

<211> 2910

<212> DNA

<213> Mouse

<400> 3

gaattcggca cgagaagata gccaaagccca ggagatgcag agtaccacta actacctgtg 60
gcatactgat gacctgctag ggcagggggc cactgccagt gtgtacaagg cccgaaacaa 120
gaaatccggg gaggtgggtg ctgtaaaggt cttcaactca gccagctatc ggcgacctcc 180
tgagggttcag gtgagggagt ttgaggtcct gcggaggctg aatcaccaga acatcgtgaa 240
gctattcgca gtggaggaaa cgggaggcag ccggcagaag gtgctaata tggagtactg 300
ctccagtggg agcctgctga gcgtgctgga agaccctgag aacacgttcg ggctttctga 360
agaggagtgc ctagtgggtg tgcgtgtgt ggtggctggc atgaaccacc tgcgggagaa 420
tggcattgtc catcgggaca tcaaacctgg gaacatcatg cgcctgggtg gcgaggaggg 480
gcagagcatc tataagctgt ctgacttcgg ggctgcccgc aagctggacg atgatgagaa 540
gtttgtttct gtctatggta cagaggaata cctgcaccct gacatgtatg agcgtgcagt 600
gctgcgcaaa cccagcaaa aggcatttgg tgtgactgtg gatctctgga gtattggggt 660
gacctgtac cacgcagcca caggcagtct gcccttcac cccttcggtg ggccccggcg 720
caacaaagag atcatgtaca gaatcaccac agagaagcca gccggggcca ttccagggac 780
tcagaagcag gaaaatgggt ccttgaggtg gagctacagc ctccccatca cctgtagact 840
gtccatgggg ctgcagaacc agctgggtgcc catcctggcc aacatcctgg aggtggaaga 900
ggataagtgc tggggctttg atcagttctt cgcgagagacc agtgacattc tgcagcgaac 960
ggatcatccac gtcttttccc taccacaggc cgttttgcac catgtctaca tccacgcccc 1020
caacacgatt gccatctttt tggaggtgtg atatgagcag accaacgtga ccccaaaaca 1080
ccaggagtac ctcttcgagg gtcacccttg tgccttgag ccaagcctct cagcccagca 1140
catcggccac acagctgcca gcagccctct aactctgttc agcatgtcca gcgacacacc 1200
taaggggctg gccttcaggg accctgctct ggatgtccca aagttcgtcc ctaaggttga 1260
cctacaggcc gattacagca cagctaaggg ggtgctgggc gctggctacc aggcctgtg 1320
gctggcgcg gtcctgctgg atggacaggc gttgatgctt cgggggttac attgggtcct 1380
ggaggtgctt caggacacgt gccagcagac actggaggct acacggacag ccctcctcta 1440
cctcggcagc agcctgggca ctgaaagggt cagcagtgga tcggggatgc ctgacgtcca 1500
ggaacgaaag gaggccacag agctaagaac caggctgcag actctctcag agatcctgtc 1560
taaatgttcc cacaatgtca cagaaacca aaggagcctg agctgtctgg gtgaagagct 1620
tttaaagaac cgggaccaga ttcattgagga taacaaaagt atccagaaga ttcagtgttg 1680
tttggaaga atgcacttca tctacaaaca gttcaagaaa tccaggatga ggccagggct 1740
cagctacaat gaggagcaga tccacaagct ggataaggta aatttcagtc atctagccaa 1800
gaggctgctg cagggtgttc aggaggagtg tgtgcagacg tatcagggtg cgctggtcac 1860
acacggcaag cgatgaggc aggtgcagag ggcccagaac cacctgcac tcattggcca 1920
ctctgtggcc acctgtaact cggaagcccg gggagcccag gagagtctga acaagatctt 1980

tgatcagctc cttctggaca gagcttccga acagggagct gaggtgtcac cgcaacctat	2040
ggctcctcat cccggccctg atccgaagga cctggctctc cacatgcagg agctttgtaa	2100
tgatatgaag ctattggcct ttgatctcca ggacaacaac cgactcatcg aacgggttaca	2160
tagagttcca tcggcaccag atgtctgagc tccctggggg ttcacaaggc actcagaagc	2220
aatagaaaca ttcatattgt acccctacac tgtgagacca aattcagggc aagttctggt	2280
tccatctcac tagcctacct ccctcttggc cattggccat tggccaacaa actagcatta	2340
ctttgactgt cctcttggga agcagctagg acagggactc ctggccatcc caggcagtat	2400
ctacagaaga gaccatgcgg ctaccacagc cttatcaaga caccaagact gttcttcctt	2460
acccaggctc tggaggtctg gtcttggaaa gaaaaggctc agccctctca cgctttgcac	2520
ttcccaggac cagcaggcat ctctgtggc ttctctgcc tctccagggt gctggatcag	2580
aatgcttatt cttcgttgtt tcctgtgctg tttcctgagt gtcccatcc cctggcctca	2640
ggcaaccac aaacggcccc tctgtgcttg gtctagatgc acctgcattt gagaaagtgg	2700
gtggttgagg ctaactgctg gtgctttgag gattctcctt gaccttttct ccgaggaacg	2760
cttggttcta agaaacagct ggtcagtatc aaccacagcc atgctaactg gacagatgtt	2820
ggaacccaaa gtcctaagga gagagcaggc ctgcaccttc agacatggaa taaatacatc	2880
gccttttctg tttaaaaaaaa aaaaaaaaaa	2910

<210> 4

<211> 717

<212> PRT

<213> Mouse

Met Gln Ser Thr Thr Asn Tyr Leu Trp His Thr Asp Asp Leu Leu	15
Gly Gln Gly Ala Thr Ala Ser Val Tyr Lys Ala Arg Asn Lys Lys	30
Ser Gly Glu Val Val Ala Val Lys Val Phe Asn Ser Ala Ser Tyr	45
Arg Arg Pro Pro Glu Val Gln Val Arg Glu Phe Glu Val Leu Arg	60
Arg Leu Asn His Gln Asn Ile Val Lys Leu Phe Ala Val Glu Glu	75
Thr Gly Gly Ser Arg Gln Lys Val Leu Ile Met Glu Tyr Cys Ser	90
Ser Gly Ser Leu Leu Ser Val Leu Glu Asp Pro Glu Asn Thr Phe	105
Gly Leu Ser Glu Glu Glu Phe Leu Val Val Leu Arg Cys Val Val	120
Ala Gly Met Asn His Leu Arg Glu Asn Gly Ile Val His Arg Asp	135
Ile Lys Pro Gly Asn Ile Met Arg Leu Val Gly Glu Glu Gly Gln	150
Ser Ile Tyr Lys Leu Ser Asp Phe Gly Ala Ala Arg Lys Leu Asp	165
Asp Asp Glu Lys Phe Val Ser Val Tyr Gly Thr Glu Glu Tyr Leu	180
His Pro Asp Met Tyr Glu Arg Ala Val Leu Arg Lys Pro Gln Gln	195
Lys Ala Phe Gly Val Thr Val Asp Leu Trp Ser Ile Gly Val Thr	210
Leu Tyr His Ala Ala Thr Gly Ser Leu Pro Phe Ile Pro Phe Gly	225

Gly Pro Arg Arg Asn Lys Glu Ile Met Tyr Arg Ile Thr Thr Glu	240
Lys Pro Ala Gly Ala Ile Ser Gly Thr Gln Lys Gln Glu Asn Gly	255
Pro Leu Glu Trp Ser Tyr Ser Leu Pro Ile Thr Cys Arg Leu Ser	270
Met Gly Leu Gln Asn Gln Leu Val Pro Ile Leu Ala Asn Ile Leu	285
Glu Val Glu Glu Asp Lys Cys Trp Gly Phe Asp Gln Phe Phe Ala	300
Glu Thr Ser Asp Ile Leu Gln Arg Thr Val Ile His Val Phe Ser	315
Leu Pro Gln Ala Val Leu His His Val Tyr Ile His Ala His Asn	330
Thr Ile Ala Ile Phe Leu Glu Ala Val Tyr Glu Gln Thr Asn Val	345
Thr Pro Lys His Gln Glu Tyr Leu Phe Glu Gly His Pro Cys Val	360
Leu Glu Pro Ser Leu Ser Ala Gln His Ile Ala His Thr Ala Ala	375
Ser Ser Pro Leu Thr Leu Phe Ser Met Ser Ser Asp Thr Pro Lys	390
Gly Leu Ala Phe Arg Asp Pro Ala Leu Asp Val Pro Lys Phe Val	405
Pro Lys Val Asp Leu Gln Ala Asp Tyr Ser Thr Ala Lys Gly Val	420
Leu Gly Ala Gly Tyr Gln Ala Leu Trp Leu Ala Arg Val Leu Leu	435
Asp Gly Gln Ala Leu Met Leu Arg Gly Leu His Trp Val Leu Glu	450
Val Leu Gln Asp Thr Cys Gln Gln Thr Leu Glu Val Thr Arg Thr	465
Ala Leu Leu Tyr Leu Gly Ser Ser Leu Gly Thr Glu Arg Phe Ser	480
Ser Gly Ser Gly Met Pro Asp Val Gln Glu Arg Lys Glu Ala Thr	495
Glu Leu Arg Thr Arg Leu Gln Thr Leu Ser Glu Ile Leu Ser Lys	510
Cys Ser His Asn Val Thr Glu Thr Gln Arg Ser Leu Ser Cys Leu	525
Gly Glu Glu Leu Leu Lys Asn Arg Asp Gln Ile His Glu Asp Asn	540
Lys Ser Ile Gln Lys Ile Gln Cys Cys Leu Asp Lys Met His Phe	555
Ile Tyr Lys Gln Phe Lys Lys Ser Arg Met Arg Pro Gly Leu Ser	570
Tyr Asn Glu Glu Gln Ile His Lys Leu Asp Lys Val Asn Phe Ser	585
His Leu Ala Lys Arg Leu Leu Gln Val Phe Gln Glu Glu Cys Val	600
Gln Thr Tyr Gln Val Ser Leu Val Thr His Gly Lys Arg Met Arg	615
Gln Val Gln Arg Ala Gln Asn His Leu His Leu Ile Gly His Ser	630
Val Ala Thr Cys Asn Ser Glu Ala Arg Gly Ala Gln Glu Ser Leu	645
Asn Lys Ile Phe Asp Gln Leu Leu Leu Asp Arg Ala Ser Glu Gln	660
Gly Ala Glu Val Ser Pro Gln Pro Met Ala Pro His Pro Gly Pro	675
Asp Pro Lys Asp Leu Val Phe His Met Gln Glu Leu Cys Asn Asp	690
Met Lys Leu Leu Ala Phe Asp Leu Gln Asp Asn Asn Arg Leu Ile	705
Glu Arg Leu His Arg Val Pro Ser Ala Pro Asp Val ***	717